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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,052	11/20/2001	Holger Bock	2727-154	8509

7590 12/29/2004

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EXAMINER

LEWIS, PATRICK T

ART UNIT	PAPER NUMBER
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1623

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,052

Applicant(s)

BOCK ET AL.

Examiner

Patrick T. Lewis

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Applicant's Response dated July 28, 2003

1. In the Response filed July 28, 2003, claims 1-10 were amended. Applicant presented arguments directed to the rejection of claims 1-4 and 6-10 under 35 U.S.C. 112, first paragraph (written description); the rejection of claim 10 under 35 U.S.C. 112, first paragraph (enablement); the rejection of claims 1-9 under 35 U.S.C. 103(a); and the rejection of claims 1-3, 5 and 10 under 35 U.S.C. 103(a).
2. Claims 1-10 are pending. An action on the merits of claims 1-10 is contained herein below.
3. The rejection of claims 1-4 and 6-10 under 35 U.S.C. 112, first paragraph (written description), has been withdrawn in view of applicant's arguments dated July 28, 2003.
4. The rejection of claim 10 under 35 U.S.C. 112, first paragraph (enablement), has been withdrawn in view of applicant's arguments dated July 28, 2003.
5. The rejection of claims 1-10 under 35 U.S.C. 112, second paragraph, has been rendered moot in view of applicant's amendment dated July 28, 2003.
6. The rejection of claims 1-9 under 35 U.S.C. § 103(a) is maintained for the reasons of record set forth in the Office Action dated February 25, 2003.
7. The rejection of claims 1-3, 5 and 10 under 35 U.S.C. § 103(a) is maintained for the reasons of record set forth in the Office Action dated February 25, 2003.

Objections/Rejections of Record Set Forth in Office Action

Dated February 25, 2003

8. Claims 1-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Egholm et al. J. Am. Chem. Soc., 1992, 114, 1895-1897 (Egholm) in combination with Varadarajan et al., Bioconjugate Chem., 1991, 2, 242-253 (Varadarajan) and Kane et al., J. Org. Chem., 1993, 58, 991-992 (Kane).

9. Claims 1-3, 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griffiths et al. US 5,846,741 (Griffith) in view of Varadarajan et al., Bioconjugate Chem., 1991, 2, 242-253 (Varadarajan).

10. Applicant's arguments filed July 28, 2003 have been fully considered but they are not persuasive. Applicant argues that one of ordinary skill in the art would not have been motivated to combine the cited prior art nor would one of ordinary skill in the art at the time of the invention have a reasonable expectation of success.

The examiner respectfully disagrees with applicant's assertions. Regarding the lack of motivation, the examiner notes that obviousness may be based on the motivation to combine prior art references where the motivation to combine is either a teaching or suggestion in an individual reference of the proposed combination or in the prior art references as a whole, or in the knowledge generally available to those skilled in the art. As shown in the prior art, one of ordinary skill in the art at the time of the invention would have been motivated to increase the hydrophobicity of designed oligomeric peptide molecules. Applicant's attention is directed to Varadarajan, page 242; Kane, page 991; and Griffiths, columns 2 and 4-5. Griffiths teaches that boronated

Art Unit: 1623

amino acids have been used to treat melanoma cells. Griffiths teaches methods to selectively deliver boron-containing compounds using a first member of a binding pair and a complementary member of the binding pair and boron atoms. Griffith also teaches that the binding pair can be complementary polynucleotide fragments, including DNA, RNA, and synthetic analogs of polynucleotides such as PNA's. Griffiths specifically discloses that the compositions are useful to treat tumors in targeted boron neutron capture therapy. Kane teaches that the production of highly localized and cytotoxic radiation through thermal neutron capture by ^{10}B is the basis for boron neutron capture therapy. Successful cancer therapy using this novel binary approach requires the selective accumulation of 5~30 ppm ^{10}B in tumor. Varadarajan teaches that while it is possible to attach more than 10^3 boron atoms to an antibody molecule, such heavily boronated antibody conjugates suffer from significantly reduced immunoreactivity or low tumor uptake. Varadarajan further teaches that the hydrophilicity of these peptide structures may be markedly increased by using anionic [*nido*-7,8- $\text{C}_2\text{B}_9\text{H}_{11}$] $^-$ moieties attached via the alpha carbon of the amino acids. In the absence of some proof of a secondary nature to obviate the rejection as set forth in the Office Action dated February 25, 2003, or of some specific limitations which would tip the scale of patentability in the favor of the instantly claimed invention, it would have been obvious to one of ordinary skill in this art at the time of the invention to formulate compounds of the formula W-U-Z as applicant has done with the above cited references before them.

Conclusion

11. Claims 1-10 are pending. Claims 1-10 are rejected. No claims are allowed.
12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick T. Lewis whose telephone number is 571-272-0655. The examiner can normally be reached on M-F 10:00 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick T. Lewis, PhD
Examiner
Art Unit 1623



James O. Wilson
Supervisory Patent Examiner
Technology Center 1600

ptl
April 9, 2004